

Remarks/Arguments

Entry of this amendment and favorable reconsideration of this application is requested.

Claims 10, 13 and 15-17 remain in the case.

Claim 17 stands withdrawn from further consideration as not reading on the elected invention.

The Examiner has withdrawn the finality of the previous Office Action, its reason for the rejection now having become moot in view of the new grounds of rejections herein.

Specifically, the Examiner now rejects Claim 10 under 35 U.S.C. § 102(b) as being anticipated by Tsujimoto et al., JP07213341 and the English abstract of JP04213341.

Claim 10 also stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Tsujimoto et al. in view of Hosoda et al.

Claims 13 and 15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Tsujimoto et al., optionally also in view of Hosoda et al., further in view of Hitchcock.

Claim 16 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Tsujimoto et al. or Tsujimoto et al. and/or Hosoda et al., further in view of Hurley et al.

Claims 18 and 19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Tsujimoto et al. or Tsujimoto et al. and Hosoda et al., further in view of Noda et al.

These rejections are traversed in view of the amendment to the claims. Specifically, the invention, as now defined by the claims, relates to a process for preparing a sheet of a crosslinked polyolefin foam expanded in an essentially unidirectional expansion only in its thickness, comprising surface-crosslinking both faces of an unsupported intermediate polyolefin sheet to be expanded so that its degree of surface crosslinking is different from its core, these faces being perpendicular to the direction of expansion, and expanding and crosslinking the so formed sheet only in its thickness.

As so disclosed by Tsujimoto et al., a cross-linked olefin resin foam is prepared by irradiating a sheet made from an olefin resin composition containing an organic peroxide and a thermally decomposable foaming agent with a low-voltage electron beam of 50-400keV, preferably in an atmosphere of a low oxygen concentration, to cross-link the surface of the sheet and then heating to carry out the cross-linking by the organic peroxide and the foaming by decomposition of the foaming agent. Note its Abstract. As so further disclosed by this reference, crosslinking occurs only in the surface area of the sheet and then foaming the inner part of the sheet is carried out by heating.

Such clearly neither teaches, within the meaning of 35 U.S.C. § 102, nor makes obvious, within the meaning of 35 U.S.C. § 103, Applicants' discovery. In the present invention, both surfaces of an intermediate polyolefin sheet are crosslinked. In this manner, by blocking lateral expansion of both surfaces of the sheet during its expansion, unidirectional expansion only in the thickness is permitted. Such clearly is not the case in Tsujimoto et al. wherein the surface, singular, i.e., only one surface of the polyolefin intermediate sheet, is crosslinked. Manifestly, crosslinking both sides of the sheet so as to effect only unidirectional expansion only in its thickness is neither taught by, nor made obvious by this reference. Manifestly, one skilled in the art from the teaching of Tsujimoto et al. would not be apprised of, nor expect, the advantageous results realized by Applicants' discovery.

With regard to the additional reliance on Hosoda et al., the claims have been amended to preclude the presence of a support, as in Hosoda et al., wherein the presence of such a support is the reason for control of the direction of expansion. Further, in this reference a crosslinking agent and a blowing agent are homogeneously distributed in the polyolefin, such clearly being inimical with the claimed surface having crosslinking only.

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Hitchcock et al. is relied upon by the Examiner solely for asserted obviousness of the additional features of Claims 13 and 15, i.e., being a continuous process and that the intermediate polyolefin sheet comprises at least 20% by weight of polyethylene as defined. As such, these references clearly do not remedy the basic inadequacies of the other references, for reasons as pointed out and discussed above.

As to Claim 16, Hurley et al. is relied upon only of asserted obviousness of preparing the polyolefin intermediate sheet by the use of a metallocene catalyst. Here again, such clearly does not remedy the inadequacies of the other references, for reasons as pointed out and discussed above.

As to Claims 18 and 19, the Examiner additionally relies upon Noda et al. However, in Noda et al., similarly, as note column 5, lines 42-47, its high-energy ionizing radiation has such a strength so as to permeate into the inside of the foamable resin sheet, and is applied under such irradiation conditions that crosslinking occurs over the entire thickness of the foamable resin sheet. Further, even if, in its alternative embodiment low-energy ionizing radiation also is applied crosslinking is effected through the entire sheet, not only on its surfaces. This clearly is inimical with the claimed process.

Accordingly, withdrawal of the rejection of the claims under and §103 of the Statute is requested.

With regard to the rejection of the claims under 35 U.S.C. § 112, first and second paragraphs, they have been amended in a manner fully supported by the disclosure, as note the above referred to section of the specification, and believed to obviate the reasons for this rejection.

Should any further amendment to the claims be considered necessary by the Examiner, he is requested to contact the undersigned by telephone so that mutually agreeable language may be arrived at.

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Withdrawal of the rejection of the claims under the first and second paragraphs of 35

U.S.C. § 112, thus is requested.

It is submitted this application is now in condition for allowance and which is solicited.

Respectfully submitted,

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